AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of the claims in this application.

Listing of Claims:

1. (Currently Amended) A method comprising:

when a mobile station is in an autonomous mode of operation, autonomously transmitting data from the mobile station to a base station on a reverse channel;

in response to receiving an acknowledgment indication from the base station, that comprises a reverse channel assignment message for the mobile station, switching the mobile station to a scheduled mode of operation, where, while in the scheduled mode, the mobile station provides data transmission power information and data transmission buffer status information as a request to transmit data and a buffer activity bit as a data rate request bit; and

transmitting data from the mobile station on an assigned reverse channel.

2. (Previously Presented) A method as in claim 1, where transmitting from the mobile station to the base station to initiate the data transmission comprises transmitting a supplemental channel request message.

3. (Previously Presented) A method as in claim 1, where the reverse channel comprises one of a reverse enhanced access channel, a reverse fundamental channel, and a reverse dedicated channel.

4. (Previously Presented) A method as in claim 2, where the acknowledgment indication comprises a supplemental channel assignment message.

5. (Original) A method as in claim 4, where the acknowledgment indication further comprises power control bits and data rate grant bits.

6. (Previously Presented) A method as in claim 5, where the power control bits and data rate grant bits are received by the mobile station on a common power control channel.

7. (Currently Amended) A method as in claim 1, ~~where transmitting the data from the mobile station on the assigned reverse channel comprises also transmitting mobile station buffer activity bits and a data rate request bit, and~~ further comprising receiving, from the base station, a power control bit, a data rate grant bit and an acknowledgment/non-acknowledgment indication.

8. (Original) A method as in claim 7, where the data rate request bit is transmitted as part of a dynamic buffer status report, and requests one of an increase in data rate, a decrease in data rate, or no change in the data rate.

9. (Original) A method as in claim 8, where the data rate grant bit is time multiplexed by the base station with the power control bit, and indicates one of a grant of the requested data rate or a denial of the requested data rate.

10. (Currently Amended) An apparatus, comprising:

an RF transceiver for conducting bidirectional wireless communications with a base station; and

a data processor operating under the control of a stored program for, when the apparatus is in an autonomous mode of operation, autonomously transmitting from the apparatus to the base station on a reverse channel, said data processor being responsive to a reception of an acknowledgment indication from the base station, that comprises a reverse channel assignment message for the apparatus, for switching the apparatus to a scheduled mode of operation and for transmitting data from the apparatus on an assigned reverse channel, where, while in the scheduled mode, the apparatus provides data transmission power information and data transmission buffer

status information as a request to transmit data and a buffer activity bit as a data rate request bit.

11. (Previously Presented) An apparatus as in claim 10, where when transmitting from the apparatus to the base station to initiate the data transmission the data processor transmits a supplemental channel request message.

12. (Previously Presented) An apparatus as in claim 10, where the reverse channel comprises one of a reverse enhanced access channel, a reverse fundamental channel, and a reverse dedicated channel.

13. (Previously Presented) An apparatus as in claim 11, where the acknowledgment indication comprises a supplemental channel assignment message.

14. (Previously Presented) An apparatus as in claim 13, where the acknowledgment indication further comprises power control bits and data rate grant bits.

15. (Previously Presented) An apparatus as in claim 14, where the power control bits and data rate grant bits are received by the apparatus on a common power control channel.

16. (Currently Amended) An apparatus as in claim 10, where ~~when transmitting the data from the on the assigned reverse channel the data processor also transmits buffer activity bits and a data rate request bit, and~~ said data processor is further responsive for receiving, in response from the base station, a power control bit, a data rate grant bit and an acknowledgment/non-acknowledgment indication.

17. (Previously Presented) An apparatus as in claim 16, where the data rate request bit is transmitted as part of a dynamic buffer status report, and requests one of an increase in data rate, a decrease in data rate, or no change in the data rate.

18. (Previously Presented) An apparatus as in claim 17, where the data rate grant bit is time

demultiplexed by the data processor with the power control bit, and indicates one of a grant of the requested data rate by the base station or a denial of the requested data rate.

19. (Previously Presented) An apparatus as in claim 10, where the apparatus and the base station communicate over a reverse synchronous code division, multiple access channel.

20. (Currently Amended) A method comprising:

when a mobile station is in an autonomous mode of operation, autonomously transmitting from the mobile station to a base station to initiate a data transmission from the mobile station to the base station, the transmission comprising a supplemental channel request message that is transmitted over a reverse enhanced access channel or a reverse supplemental channel;

receiving an acknowledgment indication from the base station over a common power control channel, the acknowledgment indication comprising a supplemental channel assignment message comprising power control bits and data rate grant bits;

in response to receiving the acknowledgment indication from the base station, switching the mobile station to a scheduled mode of operation;

transmitting data packets from the mobile station over a reverse supplemental channel ~~(R-SCH)~~, further comprising transmitting mobile station buffer activity bits and a data rate request bit, and

receiving, from the base station in response, a power control bit, a data rate grant bit and an acknowledgment/non-acknowledgment indication, wherein there exist at least four reverse supplemental channel ~~R-SCH~~ states and at least eight transitions between the reverse supplemental channel ~~R-SCH~~ states, wherein the at least four reverse supplemental channel ~~R-SCH~~ states include an reverse supplemental channel ~~R-SCH~~ initialization state, an reverse supplemental channel ~~R-SCH~~ autonomous state, an reverse supplemental channel ~~R-SCH~~ scheduled state, and an reverse supplemental channel ~~R-SCH~~ release state.

21. (Currently Amended) A method as in claim 20, where the data rate request bit is transmitted as part of a dynamic buffer status, quality of service ~~QoS~~ level and transmit power report, and requests one of an increase in data rate, a decrease in data rate, or no change in the data rate.

22. (Original) A method as in claim 21, where the data rate grant bit is time multiplexed by the base station with the power control bit, and indicates one of a grant of the requested data rate or a denial of the requested data rate.

23. (Currently Amended) A method comprising:

executing one of a plurality of techniques to generate a reverse supplemental channel ~~(R-SCH)~~ initialization state, comprising one of,

sending a modified supplemental channel request message from a mobile station ~~(SCRM)~~ to a base station ~~(BS)~~, and receiving from the base station ~~BS~~ an acknowledgement as a modified extended supplemental channel assignment message ~~(ESCAM)~~, where the modified supplemental channel request message ~~SCRM~~ comprises at least one of mobile station ~~(MS)~~ buffer status, transmit power, quality of service ~~(QoS)~~ level and a preferred mode of reverse supplemental channel ~~R-SCH~~ operation, said preferred mode of reverse supplemental channel ~~R-SCH~~ operation being one of an autonomous mode or a scheduled mode, and where the modified extended supplemental channel assignment message ~~ESCAM~~ comprises information to identify the mobile station ~~MS~~;

sending a supplemental channel request message ~~(SCRM)~~ to the base station ~~BS~~, and receiving from the base station ~~BS~~ an acknowledgement as a modified extended supplemental channel assignment mini message ~~(ESCAMM)~~, where the extended supplemental channel assignment mini message ~~ESCAMM~~ comprises the information to identify the mobile station ~~MS~~; and

sending a request over a reverse enhanced access channel ~~(R-EACH)~~, where the request

comprises parameters that specify at least the preferred mode of reverse supplemental channel ~~R-SCH~~ operation; and

~~, wherein the method is a method for operating the MS with the BS for transmitting data packets from the mobile station to the base station over the R-SCH, wherein there exist at least four R-SCH states and at least eight transitions between the R-SCH states, where the at least four R-SCH states comprise a R-SCH initialization state, a R-SCH autonomous state, a R-SCH scheduled state, and a R-SCH release state~~

after executing the reverse channel initialization state and when operating the mobile station with the base station, transmitting data packets from the mobile station on the reverse supplement channel, where there are at least four reverse supplemental channel states and at least eight transitions between the reverse supplemental channel states, where the at least four reverse supplement channel states comprise a reverse supplement channel initialization state, a reverse supplemental channel autonomous state, a reverse supplemental channel scheduled state, and a reverse supplemental channel release state.

24. (Currently Amended) A method as in claim 23, where in the reverse supplemental channel ~~R-SCH~~ autonomous state, the ~~an active~~ mobile station ~~MS~~ accesses the reverse supplemental channel ~~R-SCH~~ without prior authorization, and comprises, for constant data rate applications, one of:

sending data over the reverse supplemental channel ~~R-SCH~~ autonomously using a data rate established by one of a plurality of rules, where ~~an active~~ the mobile station ~~MS~~ is identified using at least one of medium access control identification mobile station ~~MS~~ information, that is used by the base station ~~BS~~ to distinguish between multiple autonomous mode mobile stations ~~MSs~~, and a mobile station ~~MS~~ long code; and

explicitly sending rate indication information over a reverse channel to indicate the data rate that is being used in a present reverse supplemental channel ~~R-SCH~~ frame.

25. (Currently Amended) A method as in claim 24, where in the reverse supplemental channel

~~R-SCH~~ autonomous state, and when operating with a variable data rate, the mobile station ~~MS~~ operates in a semi-scheduled mode by initially starting in the autonomous mode at a current data rate, and while sending data over the reverse supplemental channel ~~R-SCH~~, the mobile station ~~MS~~ sends a data rate request to the base station ~~BS~~ for indicating one of a request to transmit on the reverse supplemental channel ~~R-SCH~~ at a data rate of current data rate plus incremental rate, a request to transmit on the reverse supplemental channel ~~R-SCH~~ at a data rate of current data rate minus decremented rate, or a request to transmit on the reverse supplemental channel ~~R-SCH~~ at the current data rate.

26. (Currently Amended) A method as in claim 25, where the data rate request comprises 1-bit of information with three-state modulation that is sent over one of an uplink overhead dedicated channel, a common channel, the reverse supplemental channel ~~R-SCH~~ using a multiplexing option, or in a mobile station ~~MS~~ dynamic buffer status, quality of service ~~QoS~~ level and transmit power report to the base station ~~BS~~.

27. (Currently Amended) A method as in claim 25, where the base station ~~BS~~ is responsive to a receipt of the data rate request from the mobile station ~~MS~~ to either grant or deny the mobile station ~~MS~~ data rate request using grant/deny feedback information.

28. (Currently Amended) A method as in claim 27, where the grant/deny feedback information is sent to the mobile station ~~MS~~ over power control sub-channels and is time-multiplexed with power control information.

29. (Currently Amended) A method as in claim 25, where reverse supplemental channel ~~R-SCH~~ state/mode transitions between the reverse supplemental channel ~~R-SCH~~ initialization state, the reverse supplemental channel ~~R-SCH~~ autonomous state, the reverse supplemental channel ~~R-SCH~~ scheduled state and the reverse supplemental channel ~~R-SCH~~ release state occur as follows:

when transitioning from the reverse supplemental channel ~~R-SCH~~ initialization state to the

reverse supplemental channel ~~R-SCH~~ autonomous state,

the preferred mode of operation is embedded in a modified reverse supplemental channel ~~R-SCH~~ assignment mini message;

when transitioning from the reverse supplemental channel ~~R-SCH~~ initialization state to the reverse supplemental channel ~~R-SCH~~ scheduled state, the preferred mode of operation is embedded in the modified reverse supplemental channel ~~R-SCH~~ assignment mini message;

for a transition from the reverse supplemental channel ~~R-SCH~~ autonomous state to remain in the reverse supplemental channel ~~R-SCH~~ autonomous state, and in accordance with a first operational mode of operation, the mobile station ~~MS~~ remains in the reverse supplemental channel ~~R-SCH~~ autonomous state while transmitting at the initial data rate, and in accordance with a second operational mode of operation, the mobile station ~~MS~~ remains in the autonomous state when a reverse data rate indication indicates a legitimate data rate as opposed to an indication to switch to the reverse supplemental channel ~~R-SCH~~ scheduled state;

for a transition from the reverse supplemental channel ~~R-SCH~~ scheduled state to remain in the reverse supplemental channel ~~R-SCH~~ scheduled state, the mobile station ~~MS~~ remains in the reverse supplemental channel ~~R-SCH~~ scheduled state so long as there is at least not a new mode switch request in the supplemental channel request message ~~SCRM~~;

for a transition from the reverse supplemental channel ~~R-SCH~~ autonomous state to the reverse supplemental channel ~~R-SCH~~ scheduled state, and in accordance with the first operational mode of operation, the preferred mode of operation is embedded in the modified reverse supplemental channel ~~R-SCH~~ assignment mini message, and in accordance with the second operational mode of operation, a state transition trigger is implemented with the quality of service ~~QoS~~ level;

for a transition from the reverse supplemental channel ~~R-SCH~~ scheduled state to the reverse supplemental channel ~~R-SCH~~ autonomous state, and in accordance with the first operational

mode of operation, a reverse supplemental channel ~~R-SCH~~ -assigned duration timer is used as the state transition trigger such that after the duration of the scheduled transmission, the MS reverts back to the reverse supplemental channel ~~R-SCH~~ autonomous state, in accordance with the second operational mode of operation, the preferred mode of reverse supplemental channel ~~R-SCH~~ operation is embedded in the modified reverse supplemental channel ~~R-SCH~~ assignment mini message, and in accordance with a third operational mode of operation, the state transition trigger is implemented with the quality of service ~~QoS~~ level; and for transitions to the reverse supplemental channel ~~R-SCH~~ release state from the reverse supplemental channel ~~R-SCH~~ autonomous and scheduled states, reverse supplemental channel ~~R-SCH~~ release messages and procedures are used.

30. (Currently Amended) A method as in claim 29, where for the transition from the reverse supplemental channel ~~R-SCH~~ autonomous state to the reverse supplemental channel ~~R-SCH~~ scheduled state in accordance with the second operational mode of operation, the state transition trigger is implemented by an increase in a required reverse supplemental channel ~~R-SCH~~ level, and for the transition from the reverse supplemental channel ~~R-SCH~~ scheduled state to the reverse supplemental channel ~~R-SCH~~ autonomous state in accordance with the third operational mode of operation, the state transition trigger is implemented by a decrease in a required quality of service ~~QoS~~ level.

31. (Currently Amended) A method comprising:

when a mobile station is in an autonomous mode of operation, autonomously transmitting data from the mobile station to a base station on a reverse channel;

the mobile station receiving an assignment message from the base station, the assignment message comprising an acknowledgment/non-acknowledgment indication, power control bits, and data rate grant bits;

in response to receiving an acknowledgment indication from the base station, switching the

mobile station to a scheduled mode of operation; and

transmitting data from the mobile station to the base station over a reverse supplemental channel ~~(R-SCH)~~, wherein there exist at least four reverse supplemental channel ~~R-SCH~~ states and at least eight transitions between the reverse supplemental channel ~~R-SCH~~ states, wherein the at least four reverse supplemental channel ~~R-SCH~~ states include an reverse supplemental channel ~~R-SCH~~ initialization state, an reverse supplemental channel ~~R-SCH~~ autonomous state, an reverse supplemental channel ~~R-SCH~~ scheduled state, and an reverse supplemental channel ~~R-SCH~~ release state.

32. (Currently Amended) A mobile station, comprising:

an RF transceiver for conducting bidirectional wireless communications with a base station; and a data processor operating under the control of a stored program for, when the mobile station is in an autonomous mode of operation, autonomously transmitting from the mobile station to the base station on a reverse channel, the mobile station receiving an assignment message from the base station, the assignment message comprising an acknowledgment/non-acknowledgment indication, power control bits, and data rate grant bits, said data processor being responsive to a reception of an acknowledgment indication from the base station for switching the mobile station to a scheduled mode of operation and for transmitting data from the mobile station to the base station over a reverse supplemental channel ~~(R-SCH)~~, wherein there exist at least four reverse supplemental channel ~~R-SCH~~ states and at least eight transitions between the reverse supplemental channel ~~R-SCH~~ states, wherein the at least four reverse supplemental channel ~~R-SCH~~ states include an reverse supplemental channel ~~R-SCH~~ initialization state, an reverse supplemental channel ~~R-SCH~~ autonomous state, an reverse supplemental channel ~~R-SCH~~ scheduled state, and an reverse supplemental channel ~~R-SCH~~ release state.

33. (Currently Amended) A method comprising:

when a mobile station is in an autonomous mode of operation, autonomously transmitting from

the mobile station to a base station to initiate a data transmission from the mobile station to the base station, the transmission comprising a supplemental channel request message that is transmitted over a reverse channel;

in response to receiving an acknowledgment indication from the base station, switching the mobile station to a scheduled mode of operation;

transmitting data packets from the mobile station transmitting data from the mobile station to the base station over a reverse supplemental channel ~~(R-SCH)~~, wherein there exist at least four reverse supplemental channel ~~R-SCH~~ states and at least eight transitions between the reverse supplemental channel ~~R-SCH~~ states, further comprising transmitting mobile station buffer activity bits and a data rate request bit, and

receiving, from the base station in response, a power control bit, a data rate grant bit and an acknowledgment/non-acknowledgment indication, wherein the at least four reverse supplemental channel ~~R-SCH~~ states include an reverse supplemental channel ~~R-SCH~~ initialization state, an reverse supplemental channel ~~R-SCH~~ autonomous state, an reverse supplemental channel ~~R-SCH~~ scheduled state, and an reverse supplemental channel ~~R-SCH~~ release state.

34. (Currently Amended) A mobile station, comprising:

a transceiver for receiving and transmitting signals;

a signal processor coupled to the transceiver;

a controller coupled to the signal processor, the controller receiving information from the signal processor derived from the signal processor and providing information to the signal processor to be converted for transmission through the transceiver, wherein the mobile station comprises an autonomous mode and a scheduled mode, wherein, in the autonomous mode, the mobile station is configured to transmit data at a selected data transmission rate to the base station over a reverse

supplemental channel ~~(R-SCH)~~, wherein, in the scheduled mode, the mobile station is configured to transmit a request by providing data transmission power information and selected data transmission buffer status information to the base station for granting a data transmission rate to the mobile station, wherein there exist at least four reverse supplemental channel ~~R-SCH~~ states and at least eight transitions between the reverse supplemental channel ~~R-SCH~~ states, wherein the at least four reverse supplemental channel ~~R-SCH~~ states include an reverse supplemental channel ~~R-SCH~~ initialization state, an reverse supplemental channel ~~R-SCH~~ autonomous state, an reverse supplemental channel ~~R-SCH~~ scheduled state, and an reverse supplemental channel ~~R-SCH~~ release state.

35. (Previously Presented) An apparatus as in claim 10, wherein the apparatus is a mobile station.

36. (New) A method as in claim 1, wherein the buffer activity bit is a single bit.

37. (New) A method as in claim 1, wherein the buffer activity bit is arranged to undergo three-state modulation.

38. (New) An apparatus as in claim 10, wherein the buffer activity bit is a single bit.

39. (New) An apparatus as in claim 10, wherein the buffer activity bit is arranged to undergo three-state modulation.